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FAY SHARPE / XEROX - ROCHESTER
1228 EUCLID AVENUE, 5TH FLOOR
THE HALLE BUILDING
CLEVELAND, OH 44115

EXAMINER	
DHINGRA, PAWANDEEP	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/696,902	RODRIGUEZ ET AL.	
	Examiner	Art Unit	
	PAWANDEEP S. DHINGRA	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,13-17 and 20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,13-17 and 20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

- This action is responsive to the following communication: Amendment after non-final action filed on 9/13/2010.
- Claims 1-10, 13-17 and 20-25 are now pending.

Response to arguments

Applicant's amendments, filed 9/13/2010 have been entered and fully considered. However, applicant's arguments filed on 9/13/2010 have been fully considered but they are not persuasive.

Applicant argues that Richards fails to disclose internal memory with volatile portions.

In reply, examiner asserts that Turnbull has shown to include memory with both volatile and non-volatile portions, see rejections below.

Applicant further argues that references fail to show a peripheral memory external to module, comprising increased storage space for holding a software upgrade for printing apparatus.

In reply, examiner asserts that Hirst and Turnbull have been successfully shown to include the above argued peripheral memory, see rejections below.

Applicant further argues that Turnbull fails to teach that the upgrades can be installed automatically.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., then microprocessor immediately installs or schedules to install the software

upgrade, automatically, without any user intervention) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, examiner asserts that Turnbull teaches that once it's identified that upgrade is available, a user is given a selectable option for scheduling the downloading of available upgrade. Once that's done, "the option is configured to automatically download and install the upgrade to a computing device 102 without further user input" (see col. 5, lines 36-42; col. 7, lines 25-34). Thus, user only designates a preferred time but the upgrade is always automatically installed as claimed.

Applicant further argues that Hara is directed to an nonanalogous art.

In reply, examiner asserts that downloading and installing software packages or upgrades into apparatuses and monitoring the progress is very well known in the art. Hara teaches downloading and installing software onto apparatuses and reporting the progress and faults of the updating process to the user. Thus, one skill in the art would have totally been inclined to look into the areas of art such as Hara, which deal with monitoring & reporting pertaining to downloading and installing of software, analogous to the limitations as claimed.

Applicant further argues that there is no teaching, suggestion, or motivation to combine the references.

In reply, examiner asserts that it would have been totally obvious to one skilled in the art to look for those common features in the cited arts and to modify the

replacement module system as disclosed by Richards to include the techniques for operating printing consumables as taught by Owen and Hirst, upgrading techniques of Turnbull and software updating techniques as taught by Hara to come up with claimed invention for the benefits as stated previously.

Examiner Notes

Examiner cites particular paragraphs, columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 7, 9-10 and 13-15 are rejected under 35 U.S.C. 103 as being unpatentable over Richards et al., US 6,532,351 in view of Owen et al., US

2004/0080775 further in view of Hirst el al., US 5,930,553 further in view of Turnbull, US 7,146, 412 further in view of Hara, US 2004/0045000.

Re claim 1, Richards et al. discloses a replaceable module (removable module, see abstract) for a printing apparatus (printer 10, fig. 1) with programmable software controls (see figure 2 with text; abstract, note chip is programmable), the module comprising: an internal memory comprising a non-volatile core portion (CRUM memory 34, fig. 2) for holding stored instructions (see abstract; column 4, lines 4-64) (see also column 3, line 20-column 5, line 32); a communications interface (RF loop 30, fig. 2) for exchanging information with the printing apparatus (see figures 1-2; abstract; column 5, line 33-column 6, line 9); and, a microprocessor (microchip or Integrated Circuit, see element 32, figure 2) connected to the internal memory (element 34, figure 2), and the communications interface (element 30, figure 2) (see column 5, line 33-column 6, line 56).

Richards et al. fails to explicitly disclose the module comprising: an internal memory comprising a volatile portion for holding data; a peripheral memory external to said module, comprising increased storage space for holding a software upgrade for the printing apparatus programmable software controls; and a microprocessor connected to peripheral memory, the microprocessor performing the stored instructions to compare currently installed software and current machine status with available software upgrades, independent of whether said module has been replaced, to determine if the software upgrade is appropriate for installation and if an upgrade is appropriate, then automatically install the software upgrade into the printing apparatus via the

communications interface when the replaceable module is installed in the printing apparatus by causing said printing apparatus to idle, upgrading software by extracting necessary components from a web based source or from an internal memory source, monitor progress of the upgrade, report any faults, contact service personnel if the upgrades is not successfully completed, and return the printing apparatus to normal operation when the software upgrade is complete so that the software upgrade for the printing apparatus is inhibited from being repeated.

However, Owen et al. teaches a replaceable module (replaceable component 12B, see fig. 3), the module comprising: a microprocessor (S412, fig. 4, note that replaceable component has a microprocessor in it) connected to an internal memory (element 1462, fig. 3), a peripheral memory (element 1464, fig. 3) and a communications interface (element 142, fig. 3) (see paragraphs 23-24, 27).

Hirst et al. teaches a replaceable module (consumable device such as toner cartridge 18 is installed in a printing apparatus 10, fig. 1), see col. 4, lines 45-50) for a printing apparatus (printer 10, fig. 1) with programmable software controls (see col. 4, lines 45-67, col. 2, lines 32-65), the module comprising: a peripheral memory (consumable memory device 19, fig. 1) external to said module, comprising increased storage space for (note that memory device 19 is affixed to the replaceable toner module 18. It doesn't need to be within the housing of the toner 18, thus memory 19 is situated external to the housing of toner 18 comprising extra space for storing upgrades, see col. 4, lines 45-49) holding a software upgrade for the printing apparatus programmable software controls (see column 4, line 45-column 5, line 65) (see also

column 2, line 55-column 3, line 33); and a microprocessor (microcomputer 30, fig. 3) connected to a internal memory (elements 31-33, fig. 3), a peripheral memory (element 19, fig. 1, note that element 30 is connected to element 19) and a communications interface (interface between elements 30 & 19, fig. 1 and buses 35-36, fig. 3) (see figs. 1 & 3 with text), the microprocessor performing the stored instructions to compare currently installed software and current machine status with available software upgrades to determine if the software upgrade is appropriate for installation and if an upgrade is appropriate, then automatically install the software upgrade into the printing apparatus via the communications interface when the replaceable module is installed in the printing apparatus (see col. 3, lines 34-54; col. 4, lines 45-67; col. 5, line 54-col. 6, line 12; figures 4-6, note if new consumable is identified based on comparison methods shown after installation and contains the desired code patch than the necessary software patches are automatically installed into image forming device. Further, note that the microprocessor 30 checks the current machine status to see if new consumable is detected and checks consumable memory 19 for updates. If updates appear to be new as compared to the currently installed software updates in the printing apparatus 10 then downloads and automatically installs the new updates from consumable memory 19 into printing apparatuses nonvolatile EEPROM 33 memory) by causing said printing apparatus to idle, upgrading software by extracting necessary components from a web based source or from an internal memory source (memory device 19 within the housing of consumable 18), and return the printing apparatus to normal operation when the software upgrade is complete (note that microcomputer 30 within printer controller

13 controls all the functions of the printing apparatus 10, and it is quite apparent and well known in art that while downloading and installing new updates, microcomputer 30 constitutes its resources towards that task and causing normal operations of the printer to idle until the completion of necessary upgrading) so that the software upgrade for the printing apparatus is inhibited from being repeated (see column 2, lines 4-65; column 3, lines 34-54), (see also column 5, line 54-column 6, line 12).

Turnbull teaches a module (controller 302, fig. 3) for printing apparatus (computing device 102, note that device 102 is a printer, fig. 3 with text) with programmable software controls (EEPROM is programmable), the module comprising: an internal memory comprising a non-volatile core portion (hard disk 310) and a volatile portion (volatile memory 306) for holding stored instructions (se fig. 3 with text); a peripheral memory (EEPROM 312 or 332, fig. 3) external to said module, comprising increased storage space for holding a software upgrade for the printing apparatus (note that EEPROM 332 can also be used which is external to the housing of the controller 302 as a peripheral memory comprising extra space for holding software upgrades, see fig. 3 with text); a microprocessor (CPU 304, fig. 3) connected to peripheral memory (EEPROM 312 or 332, fig. 3), the microprocessor (CPU of controller 302 performs all the computing and controls and executes the upgrade applet 314) performing stored instructions (firmware is stored in EEPROM) to compare currently installed software (current version) with available software upgrades (upgrade version), independent of whether said module has been replaced, (see fig. 4 with text) (also see figs. 3, 5 with text) to determine if the software upgrade is appropriate for installation and if an

upgrade is appropriate, then automatically install the software upgrade into the printing apparatus (see fig. 4 with text, note that that once it's identified that upgrade is available, a user is given a selectable option for scheduling the downloading of available upgrade. Once that's done, "the option is configured to automatically download and install the upgrade to a computing device 102 without further user input" (see col. 5, lines 36-42; col. 7, lines 25-34. Thus, user only designates a preferred time but the upgrade is always automatically installed as claimed) via communications interface (interface between device 102 and server 110 via computer 108, see fig. 3 with text) when the module is installed in the printing apparatus by causing said printing apparatus to idle, upgrading software by extracting necessary components from a web based source (URL address), and return the printing apparatus to normal operation when the software upgrade is complete so that the software upgrade for the printing apparatus is inhibited from being repeated (see figs. 3-5 with text, note that it is quite apparent and well known in art that while downloading and installing new updates, CPU constitutes its resources towards that task and causing normal operations of the printer to idle until the completion of necessary upgrading. Turnbull further teaches that after completion of upgrades, the printer stays in normal operating mode and inhibits upgrades from being repeated until a predestinated time as scheduled & desired by a user).

Hara teaches monitoring progress of the upgrade (installer containing software package), reporting any faults (error message), contacting service personnel (user of device 1) if the upgrades is not successfully completed (see figs. 6-7 with text, note that

controller monitors a installer request and whether a software package has been successfully installed; it gives a error message to the user if software package cannot be downloaded and installed (i.e. since it has already been installed previously)).

It would have been advantageous to modify the replacement module and its system as disclosed by Richards to include the techniques for operating printing consumables as taught by Owen, techniques for having automated system for upgrading of consumable as taught by Hirst, techniques for automatic discovery and installation of firmware upgrades into the printing apparatus as taught by Turnbull and techniques for monitoring the progress of software packages as taught by Hara for the benefit of having "improved methods, replaceable components, and systems that provide communication with memory in a replaceable component without requiring a printing device" as taught by Owen in paragraph 3, and "to provide more direct communication with the manufacturers of the consumable components regarding the consumption rates, installation and exhaustion dates and other key information. Additionally, it would be advantageous to be able to provide software patches and updates to the office automation and image forming devices. Also, it would be advantageous to provide a robust two way communications link between a host device and image forming and office automation devices" as taught by Hirst at column 2, lines 19-29, "to automatically discovering when firmware upgrades are available, notifying a user of such firmware upgrades and installing such firmware upgrades" as taught by Turnbull at col. 1, lines 8-12, and preventing unnecessary consumption of resources for performing duplicate software package installations as taught by Hara at paragraph 49.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to combine the apparatus of Richards with the apparatuses of Owen, Hirst, Turnbull and Hara to reach the aforementioned advantage.

Re claim 2, Richards et al. further discloses the communications interface comprises a wired communication element (see column 5, line 33-column 7, line 14).

Re claim 3, Richards et al. further discloses the communications interface comprises a wireless communication element (see column 5, line 33-column 7, line 14).

Re claim 4, Richards et al. fails to further disclose a peripheral memory interface, where the microprocessor is connected to the peripheral memory through the peripheral memory interface.

However, Owen et al. teaches a peripheral memory interface, where the microprocessor is connected to the peripheral memory through the peripheral memory interface (see figures 3-4 with text).

Hirst et al. also teaches a peripheral memory interface, where the microprocessor is connected to the peripheral memory through the peripheral memory interface (note, interface between elements 30 & 19, fig. 1, see fig. 1 with text).

Re claim 7, Richards et al. fails to further disclose the peripheral memory comprises nonvolatile integrated circuit chip memory.

However, Owen teaches the peripheral memory comprises nonvolatile integrated circuit chip memory (see figure 3; paragraph 18).

Hirst et al. also teaches the peripheral memory comprises nonvolatile integrated circuit chip memory (see col. 2, lines 55-65, col. 4, line 45-column 5, line 24).

Re claim 9, Richards et al. discloses a printing apparatus (printer 10, fig. 1), a method of operating a replaceable module (removable module, see abstract; claims 1-2), the method comprising: installing the replaceable module in the printing apparatus (see abstract, figures 1-3, claims 1-2).

Richards et al. fails to further disclose allowing a processor element on board the replaceable module to interrogate the printing apparatus, wherein interrogating includes identifying previously installed replaceable modules; determining which software components in the printing apparatus need to be upgraded, independent of whether the module has been replaced, by comparing software currently installed in the printing apparatus with available software upgrades; accessing external memory to retrieve and load any necessary software code components for an upgrade; automatically installing the software code into the printing apparatus by the processor element in the replaceable module so that a field engineer or other individual need not perform the software upgrade for the printing apparatus; monitoring the progress of the software upgrade; reporting any fault occurring during the upgrade; placing a service call if the upgrade is unsuccessful; and returning the printing apparatus to normal operating mode when the software upgrade is complete.

However, Owen et al. teaches allowing a processor element on board the replaceable module to interrogate the printing apparatus (see element 144 in fig, 3;

element 412 in fig. 4; paragraph 27; claim 4, note that processor interrogates the memory of printing apparatus for which application to execute according to the request made by the host). Owen further discloses installing the replaceable module in the printing apparatus; the replaceable module comprising a processor element (see element 412 in fig. 4; claim 4) and executing an software application by the processor element (see figures 3-4 with corresponding text; claim 4).

Hirst et al. teaches allowing a processor element (microcomputer 30, figs. 1, 3) to interrogate the printing apparatus (image forming device 10, fig. 1), wherein interrogating includes identifying previously installed replaceable modules (see column 3, lines 16-54; column 4, line 45-column 6, line 20, note that the microcomputer within the printer controller 13 interrogates previously stored consumable identification number and identifies newly installed consumables from previously installed consumables); determining which software components in the printing apparatus (image forming device 10, fig. 1) need to be upgraded (see figures 4-6, column 3, lines 34-54; column 5, lines 54-65) by comparing software currently installed in the printing apparatus with available software upgrades (see col. 3, lines 34-54; col. 4, lines 45-67; col. 5, line 54-col. 6, line 12; figures 4-6, note if new consumable is identified based on comparison methods shown after installation and contains the desired code patch than the necessary software patches are installed into image forming device. Further, note that the microprocessor 30 checks the current machine status to see if new consumable is detected and checks consumable memory 19 for updates. If updates appear to be new as compared to the currently installed software updates in the printing apparatus 10

then downloads and installs the new updates from consumable memory 19 into printing apparatuses nonvolatile EEPROM 33 memory); accessing external memory (memory 19 within consumable 18, note that memory device 19 is affixed to the replaceable toner module 18. It doesn't need to be within the housing of the toner 18, thus memory 19 is situated external to the housing of toner 18 comprising extra space for storing upgrades, see col. 4, lines 45-49) to retrieve and load any necessary software code components for an upgrade (see figures 4-6; column 3, lines 34-54; column 5, lines 54-65); automatically installing the software code into the printing apparatus by the processor element (microcomputer 30, figs. 1, 3) in the printing apparatus (see column 3, lines 34-54; column 4, line 45-column 6, line 20, note if new consumable is identified based on comparison methods shown and contains the desired code patch than the necessary software patches are installed into image forming device) so that a field engineer or other individual need not perform the software upgrade for the printing apparatus (see column 2, lines 4-65; column 3, lines 34-54), (see also column 5, line 54-column 6, line 20); returning the printing apparatus to normal operating mode when the software upgrade is complete (note that microcomputer 30 within printer controller 13 controls all the functions of the printing apparatus 10, and it is quite apparent and well known in art that while downloading and installing new updates, microcomputer 30 constitutes its resources towards that task and ceasing normal operations of the printer until the completion of necessary upgrading) so that no other individual needs to perform the software upgrade for the printing apparatus (see column 2, lines 4-65; column 3, lines 34-54), (see also column 5, line 54-column 6, line 12).

Turnbull teaches a method of operating a module (controller 302, fig. 3) for printing apparatus (computing device 102, note that device 102 is a printer, fig. 3 with text) the method comprising: accessing external memory to retrieve and load any necessary software code components for an upgrade (note that EEPROM 332 can also be used which is external to the housing of the controller 302 as a peripheral memory comprising extra space for holding software upgrades, see figs. 3-4 with text); determining which software components (software version) in the printing apparatus need to be upgraded, independent of whether the module has been replaced, by comparing software currently installed in the printing apparatus with available software upgrades (see fig. 4 with text); automatically installing the software code into the printing apparatus by the processor element in the replaceable module so that a field engineer or other individual need not perform the software upgrade for the printing apparatus (see fig. 4 with text, note that that once it's identified that upgrade is available, a user is given a selectable option for scheduling the downloading of available upgrade. Once that's done, "the option is configured to automatically download and install the upgrade to a computing device 102 without further user input" (see col. 5, lines 36-42; col. 7, lines 25-34. Thus, user only designates a preferred time but the upgrade is always automatically installed as claimed).

Hara teaches monitoring the progress of the software upgrade (installer containing software package); reporting any fault (error message) occurring during the upgrade; placing a service call (message is sent and displayed on user of device 1) if the upgrade is unsuccessful (see figs. 6-7 with text, note that controller monitors a

installer request and whether a software package has been successfully installed; it gives a error message to the user if software package cannot be downloaded and installed (i.e. since it has already been installed previously), the error message is displayed on the user's machine).

Re claim 10, Richards et al. fails to further disclose the processor element is a microprocessor.

However, Owen et al. discloses the processor element is a microprocessor (see paragraph 27, note that processor is a microprocessor).

Re claim 13, Richards et al. further discloses the memory is accessed via a network connection (see column 5, line 33-column 7, line 14).

Hirst et al. also teaches the memory is accessed via a network connection (see figs. 1, 3 with text and fig 5).

Owen et al. also teaches accessing the memory via a network connection (see figures 3-4 with text).

Re claim 14, Hirst et al. further teaches the network connection is comprised of the internet (see col. 6, lines 17-21).

Re claim 15, Richards et al. further discloses the network connection access is accomplished by a wireless communication element (see column 5, line 33-column 7, line 14).

3. Claims 5-6, and 8 are rejected under 35 U.S.C. 103 as being unpatentable over Richards et al., US 6,532,351 in view of Owen et al., US 2004/0080775 further in view of Hirst el al., US 5,930,553 further in view of Turnbull, US 7,146, 412 further in view of Hara, US 2004/0045000 further in view of well known art.

Re claim 5, 6 & 8, Richards fails to further disclose that the peripheral memory comprises flash memory, flashcards or bubble memory.

Owen discloses "Other fixed media and removable media memory devices 28 are optionally included in host computer 20D. The memories 22 and 28, which provide data storage mechanisms, can be read-only memory (ROM), random access memory (RAM), a hard drive, a floppy disk drive, a CD-ROM drive, and other conventional memory device" (see paragraph 18).

However, Official Notice is taken to note that ability to use variety of different types of memory's is notoriously well known and commonly used in the art. It would have been obvious to include a flash memory, flashcards or bubble memory as non-volatile peripheral memory or as removable media memory devices 28 in the system of Owen for the benefit of providing the user with increased flexibility and options to use other conventional memory devices (see Owen, paragraph 18).

It would have been advantageous to modify the replacement module and its system as disclosed by Richards to include the techniques for operating printing consumables as taught by Owen and Hirst, techniques for automatic discovery and installation of firmware upgrades into the printing apparatus as taught by Turnbull and software

updating techniques as taught by Hara for the benefit of having "improved methods, replaceable components, and systems that provide communication with memory in a replaceable component without requiring a printing device" as taught by Owen in paragraph 3, and "to provide more direct communication with the manufacturers of the consumable components regarding the consumption rates, installation and exhaustion dates and other key information. Additionally, it would be advantageous to be able to provide software patches and updates to the office automation and image forming devices. Also, it would be advantageous to provide a robust two way communications link between a host device and image forming and office automation devices" as taught by Hirst at column 2, lines 19-29, "to automatically discovering when firmware upgrades are available, notifying a user of such firmware upgrades and installing such firmware upgrades" as taught by Turnbull at col. 1, lines 8-12, and preventing unnecessary consumption of resources for performing duplicate software installations as taught by Hara at paragraph 49. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to combine the apparatus of Richards with the apparatuses of Owen, Hirst, Turnbull and Hara to reach the aforementioned advantage.

4. Claims 16-17 and 20-22 are rejected under 35 U.S.C. 103 as being unpatentable over Richards et al., US 6,532,351 in view of Owen et al., US 2004/0080775 further in view of Rasche et al., US 7,262,873 further in view of McIntyre, US 2003/0063305 further in view of Hirst el al., US 5,930,553 further in view of Turnbull, US 7,146, 412 further in view of Hara, US 2004/0045000.

Re claim 16, Richards et al. discloses a printing apparatus (see figure 1), a method of operating a replaceable module, the method comprising: installing the replaceable module in the printing apparatus (see abstract, figures 1-3, claims 1-2).

Richards fails to further disclose a method of operating a replaceable module having a processor element on board the replaceable module, the method comprising: placing the printing apparatus into diagnostic mode; allowing a processor element on board the replaceable module to interrogate the printing apparatus; interrogating said printing apparatus by comparing currently installed software and current machine status with available software upgrades, independent of whether the replaceable module has been replaced; determining from the interrogation which software components in the printing apparatus need to be upgraded; automatically scheduling as determined by the processor element when a software upgrade should occur; accessing external memory as directed by the processor element in order to retrieve and load necessary software code components to perform an upgrade; installing the software code into the printing apparatus by the processor element in the replaceable module; monitoring the progress of the software upgrade; reporting any fault occurring during the upgrade; placing a service call if the upgrade is unsuccessful; and returning the printing apparatus to normal operating mode when the software upgrade is complete.

However, Owen discloses a method of operating a replaceable module having a processor element on board the replaceable module (see abstract figures 3-4; element 144 in fig, 3; element 412 in fig. 4; paragraph 27, claim 4), the method comprising: allowing a processor element on board the replaceable module to interrogate the

printing apparatus (see figures 3-4, paragraph 27). Owen further discloses installing the replaceable module in the printing apparatus; the replaceable module comprising a processor element (see claim 4; element 412 in fig. 4) and executing a software application by the processor element (see figures 3-4 with corresponding text; claim 4).

Rasche et al. discloses placing the printing apparatus (photocopier 30) into diagnostic mode before allowing a processor element of server 50 to interrogate the printing apparatus (see column 2, lines 8-15; column 8, lines 15-48).

McIntyre discloses automatically scheduling as determined by the processor element (see paragraphs 21, 36) when a software upgrade should occur (see paragraphs 13, 37; claim 10).

Hirst et al. discloses installing the replaceable module (consumable device such as toner cartridge 18, see col. 4, lines 45-50) in the printing apparatus (printer 10, fig. 1) (see col. 4, lines 45-67, col. 2, lines 32-65); interrogating the printing apparatus (see figures 4-6); interrogating said printing apparatus by comparing currently installed software and current machine status with available software upgrades; (see figures 4-6) (see also column 3, lines 34-54; column 5, lines 54-65); determining from the interrogation which software components in the printing apparatus need to be upgraded (see figures 4-6) (see also column 3, lines 34-54; column 5, lines 54-65); accessing external memory (note that memory device 19 is affixed to the replaceable toner module 18. It doesn't need to be within the housing of the toner 18, thus memory 19 is situated external to the housing of toner 18 comprising extra space for storing upgrades, see col.

4, lines 45-49) as directed by the processor element (microcomputer 30, figs. 1, 3) in order to retrieve and load any necessary software code components for to perform upgrade (see figures 4-6; column 3, lines 34-54; column 5, lines 54-65); and, installing the software code into the printing apparatus by the processor element in the printing apparatus (see column 3, lines 34-54; column 4, line 45-column 6, line 20, note if new consumable is identified based on comparison methods shown and contains the desired code patch than the necessary software patches are installed into image forming device); returning the printing apparatus to normal operating mode when the software upgrade is complete (note that microcomputer 30 within printer controller 13 controls all the functions of the printing apparatus 10, and it is quite apparent and well known in art that while downloading and installing new updates, microcomputer 30 constitutes its resources towards that task and ceasing normal operations of the printer until the completion of necessary upgrading) so that no other individual needs to perform the software upgrade for the printing apparatus (see column 2, lines 4-65; column 3, lines 34-54), (see also column 5, line 54-column 6, line 12).

Turnbull teaches in a printing apparatus (computing device 102, note that device 102 is a printer, fig. 3 with text), a method of operating a module (controller 302, fig. 3) having a processor element (CPU 304), the method comprising: accessing external memory as directed by processor element in order to retrieve and load any necessary software code components to perform an upgrade (note that EEPROM 332 can also be used which is external to the housing of the controller 302 as a peripheral memory comprising extra space for holding software upgrades, see figs. 3-4 with text);

interrogating said printing apparatus by comparing currently installed software with available software upgrades, independent of whether the replaceable module has been replaced (see fig. 4 with text).

Hara teaches monitoring the progress of the software upgrade (installer containing software package); reporting any fault (error message) occurring during the upgrade; placing a service call (message is sent and displayed on user of device 1) if the upgrade is unsuccessful (see figs. 6-7 with text, note that controller monitors a installer request and whether a software package has been successfully installed; it gives a error message to the user if software package cannot be downloaded and installed (i.e. since it has already been installed previously)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the replacement module and its system as disclosed by Richards to include the techniques for operating printing consumables as taught by Owen and Hirst, techniques for automatic discovery and installation of firmware upgrades into the printing apparatus as taught by Turnbull, software updating techniques as taught by Hara, printer diagnostics techniques as taught by Rasche, and techniques for updating printer's firmware as taught by McIntyre for the benefit of having "improved methods, replaceable components, and systems that provide communication with memory in a replaceable component without requiring a printing device" as taught by Owen in paragraph 3, to provide an improved stand-alone printer which when diagnosed can provide useful statistical data as taught by Rasche at column 2, lines 8-15; column 8, lines 15-63, "to provide a system whereby customized, default printer control panel

settings are restored while minimizing losses in material or human resources resulting from changed default settings. Preferably, such a system would enable both automatic and manual restoration or reconfiguration of the control panel settings of one or more printers. Additionally, the ability to allow a user to restore or reconfigure the control panel settings of one or more printers without having to individually adjust the control panel settings of each of the affected printers is desirable" as taught by McIntyre in paragraph 8, and "to provide more direct communication with the manufacturers of the consumable components regarding the consumption rates, installation and exhaustion dates and other key information. Additionally, it would be advantageous to be able to provide software patches and updates to the office automation and image forming devices. Also, it would be advantageous to provide a robust two way communications link between a host device and image forming and office automation devices" as taught by Hirst at column 2, lines 19-29, "to automatically discovering when firmware upgrades are available, notifying a user of such firmware upgrades and installing such firmware upgrades" as taught by Turnbull at col. 1, lines 8-12, and preventing unnecessary consumption of resources for performing duplicate software installations as taught by Hara at paragraph 49.

Claims 17, 20-22, claims 17, 20-22 are essentially similar to claims 10, 13-15 and are rejected on the same grounds (see explanation of claims 10, 13-15 given above).

5. Claims 23-25 are rejected under 35 U.S.C. 103 as being unpatentable over Richards et al., US 6,532,351 in view of Owen et al., US 2004/0080775 further in view of Rasche et al., US 7,262,873 further in view of McIntyre, US 2003/0063305 further in

view of Hirst el al., US 5,930,553 further in view of Turnbull, US 7,146, 412 further in view of Hara, US 2004/0045000 further in view of well known art.

Re claim 23, Richards fails to further disclose the interrogation further comprises gathering machine and software version indicia, model number, serial number, and other identifying information, as would be desirable for completing an inventory of machines in the field.

Rasche et al. discloses interrogating the printing apparatus (photocopier 30) (see column 8, lines 15-48) wherein the interrogation further comprises gathering machine (check on electronic hardware) and software version indicia (code version), and other identifying information, as would be desirable for completing an inventory of machines in the field (see column 8, lines 15-48). Rasche fails to explicitly teach gathering the machine model number, and serial number.

However, Official Notice is taken to note that ability to gather model number, and serial number of a machine in addition to other information pertaining to performing software update checks is notoriously well known and commonly used in the art. It would have been obvious to gather machine model number, and serial number in addition to other identifying information in the system of Rasche for the benefit of keeping track of which serial and model number machines have been updated or need software updates (see Rasche, column 8, lines 15-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the replacement module and its system as disclosed by

Richards to include the techniques for operating printing consumables as taught by Owen and Hirst, techniques for automatic discovery and installation of firmware upgrades into the printing apparatus as taught by Turnbull, software updating techniques as taught by Hara, printer diagnostics techniques as taught by Rasche, and techniques for updating printer's firmware as taught by McIntyre for the benefit of having "improved methods, replaceable components, and systems that provide communication with memory in a replaceable component without requiring a printing device" as taught by Owen in paragraph 3, to provide an improved stand-alone printer which when diagnosed can provide useful statistical data as taught by Rasche at column 2, lines 8-15; column 8, lines 15-63, "to provide a system whereby customized, default printer control panel settings are restored while minimizing losses in material or human resources resulting from changed default settings. Preferably, such a system would enable both automatic and manual restoration or reconfiguration of the control panel settings of one or more printers. Additionally, the ability to allow a user to restore or reconfigure the control panel settings of one or more printers without having to individually adjust the control panel settings of each of the affected printers is desirable" as taught by McIntyre in paragraph 8, and "to provide more direct communication with the manufacturers of the consumable components regarding the consumption rates, installation and exhaustion dates and other key information. Additionally, it would be advantageous to be able to provide software patches and updates to the office automation and image forming devices. Also, it would be advantageous to provide a robust two way communications link between a host device and image forming and

office automation devices" as taught by Hirst at column 2, lines 19-29, "to automatically discovering when firmware upgrades are available, notifying a user of such firmware upgrades and installing such firmware upgrades" as taught by Turnbull at col. 1, lines 8-12, and preventing unnecessary consumption of resources for performing duplicate software installations as taught by Hara at paragraph 49.

Re claim 24, Richards fails to further disclose the identifying information is passed via the network connection.

However, Rasche et al. further discloses the identifying information is passed via the network connection (see column 3, lines 14-36; column 8, lines 15-48).

Re claim 25, Richards fails to further disclose the identifying information is stored in memory on the replaceable module.

Hirst et al. discloses the identifying information (user settings) is stored in memory on the replaceable module (see figure 5).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAWANDEEP S. DHINGRA whose telephone number is (571)270-1231. The examiner can normally be reached on M-F, 9:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. D./
Examiner, Art Unit 2625

/David K Moore/

Supervisory Patent Examiner, Art Unit 2625